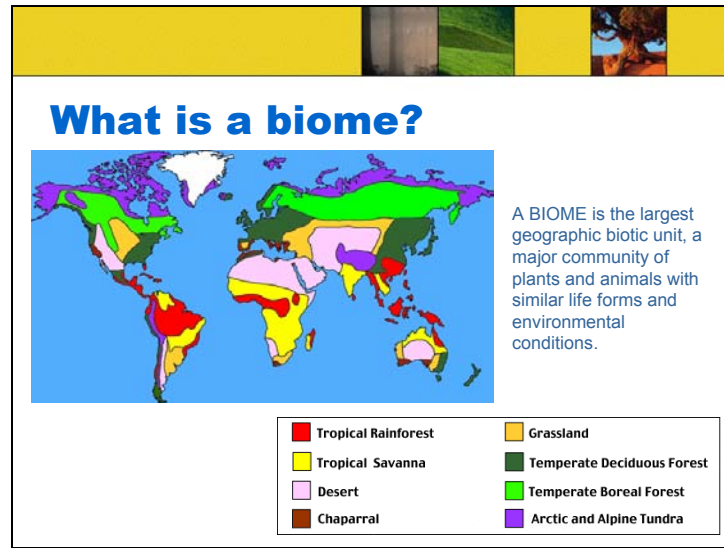


Slide 1



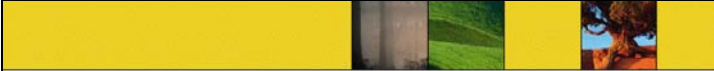
Slide 2



A biome is a large geographic area containing similar plants and animals. This map shows the locations of some of the major biomes of the world.

Each biome can have distinguishing characteristics based on local factors. For example, within the desert biome, there may be hot, cold, and coastal deserts, each with slightly different climates.

It is possible to divide the biomes into smaller units that we call biotic communities, ecosystems, or habitats.



How are biomes formed?

Biomes are distributed across the Earth based primarily on climate. Therefore, in areas that are far apart, you will sometimes find similar plants and animals because the climate is similar.

One factor affecting climate is latitude. Typically, the farther you move north or south of the equator, the colder the temperature gets. Another factor affecting climate is elevation. The higher you go in elevation, the colder the temperature gets.

Biomes usually found at cold latitudes far from the equator are sometimes also found on high mountains at low latitudes. Typically, a climb of 100 feet in elevation is equivalent to traveling 600 miles northward.

Climate is a major factor in forming biomes because it is a major factor in controlling which living organisms survive.

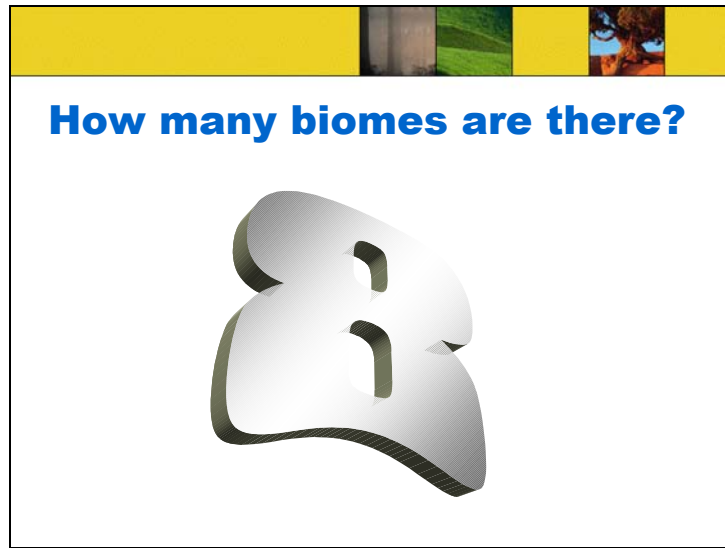
Most plants that live in cold climates have developed similar adaptations to the cold, and those adaptations are significantly different from the ones required to survive in warm climates.

As a result, areas with similar climates (on a global scale) have similar biotic communities and are therefore considered the same biome.

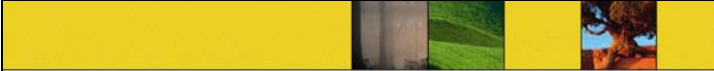
Climates change as we move north or south from the equator. As a rule, temperatures drop the farther you get from the equator. Therefore, many biomes are distributed along very distinct lines of latitude. For example, deserts are typically found around 30 degrees North or South latitude.

However, climate can also be affected by elevation. Thus, biomes that are typically found closer to the poles may also be found on mountains located near the equator.

Slide 4



For purposes of this class, we will consider there to be eight biomes...



How many biomes are there?

Although there is some disagreement among scientists on how to divide up the Earth's biomes, most can agree on the following eight:

- Tropical Rainforest
- Tropical Savanna
- Desert
- Chaparral
- Grassland
- Temperate Deciduous Forest
- Temperate Boreal Forest
- Tundra


...However, there is some disagreement among scientists about how many biomes there should be. Some argue that there are as few as five and others that there are as many as thirteen or more. For our purposes, we will focus only on the terrestrial (land) biomes. If we included aquatic, there would be even more.

The eight biomes represented here are pretty standard, but they are relatively generic. It is possible to divide these into smaller biomes. For example, we could break the tundra into arctic tundra and alpine tundra.



Tropical Rainforest

- Typically found near the equator
- Receives more than 200 cm of rain annually
- Temperatures typically fall between 20°C and 25°C for the entire year
- As many as 50% of all the world's animal species may be found here

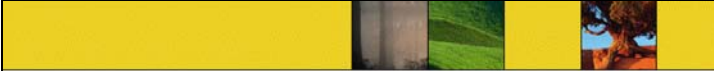




Tropical Savanna


- Grasslands with a few scattered trees
- Experience a wet and dry season
- Hot temperatures
- Annual rainfall is between 50 and 127 cm
- More species of grazing mammals than any other biome





Desert


- Typically found between 25° and 40° latitude
- Receives less than 25 cm of rain each year
- Temperatures typically range between 20°C and 25°C but some extreme deserts can reach temperatures higher than 38°C and lower than –15°C

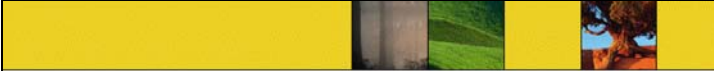




Chaparral

- Found between 32° and 40° latitude on the west coast of continents
- Receives between 35 and 70 cm of rain, usually in the winter
- Extremely resistant to drought and weather events

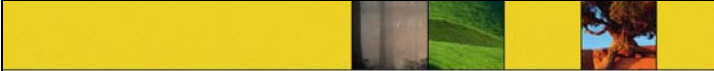




Grassland


- Because of the dry climate, trees are found only near water sources such as streams
- Usually receives between 50 and 90 cm of rainfall each year
- Summer temperatures can reach up to 38°C, and winter temperatures can fall to -40°C

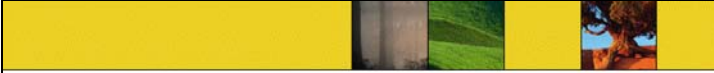




Temperate Deciduous Forest


- Moderate climate
- Most trees will lose their leaves in the winter
- Temperatures range between – 30°C and 30°C
- Averages from 75 to 150 cm of precipitation
- Well developed understory

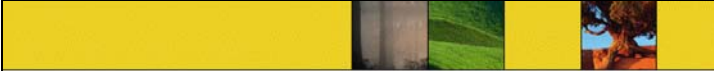




Temperate Boreal Forest


- Also known as Taiga
- Typically found between 45° and 60° North latitude
- Cold climate with summer rains
- Very few reptiles
- Limited understory
- Snow is primary form of precipitation (40 – 100 cm annually)

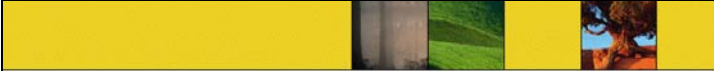




Tundra

- Means treeless or marshy plain
- Characterized by permafrost – permanently frozen soil starting as high as a few centimeters below the surface – which severely limits plant growth
- Winter temperatures average – 34°C while summer temperatures usually average below 10°C
- Low precipitation (15–25 cm per year) but ground is usually wet because of low evaporation





Credits

- Text:
 - <http://www.physicalgeography.net/fundamentals/9k.html>
 - <http://www.ucmp.berkeley.edu/glossary/gloss5/biome/index.html>
- Pictures:
 - <http://www.worldbiomes.com/>
 - <http://www.ucmp.berkeley.edu/glossary/gloss5/biome/index.html>
 - <http://www.blueplanetbiomes.org/>
- PowerPoint:
 - Arizona Game and Fish Department, 2005